10. NIGHTCAP VILLAGE ENVIRONMENTAL MANAGEMENT PLAN

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Engineering the Future

Nightcap Urban Village

Environmental Management Plan

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NIGHTCAP URBAN VILLAGE
ENVIRONMENTAL MANAGEMENT PLAN

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EXECUTIVE SUMMARY

This Environmental Management Plan (EMP) has been prepared on behalf of Peter Van Lieshout for submission with an application for development of Lot 3 on DP771335 and Lot 121 on DP134446 located on the Uki-Kyogle Road, Kunghur, New South Wales.

Site investigations were undertaken to determine opportunities and constraints of development. This EMP provides management measures to mitigate potential impacts identified during site investigations including air quality and noise control measures, water quality and sediment and erosion control and waste minimisation and management.

An Ecological Assessment was undertaken to identify significant flora and fauna communities pursuant to the *Threatened Species Conservation Act 1995*, *Fisheries Management Act 1994*, *Rivers and Foreshores Improvement Act 1948* and the *State Environment Planning Policy – Koala Habitat Protection*. Protection of significant flora and fauna pursuant to this legislation will be provided by management measures proposed within this EMP.

This EMP was developed to ensure compliance with the requirements of the *Environmental Planning and Assessment Act 1979* and the provisions of the *Tweed Local Environment Plan 2000* and the *Tweed Shire Council Development Control Plan No. 16 Subdivision Manual*.

1. INTRODUCTION

This Environmental Management Plan (EMP) provides environmental management requirements for construction of the Nightcap Urban Village at 2954 Kyogle Road, Khungur New South Wales. The site is located 12km southwest of Uki in the Nightcap Ranges and comprises Lot 3 on DP771335 and Lot 121 on DP134446. A Site Locality Plan is presented as Figure 1. The site is predominantly cleared with existing riparian vegetation associated with the Tweed River, which traverses the site in the south.

The proposed development will involve construction of urban residential and village residential lots including medium density and high density residential precincts. A mixed use precinct will be established in the centre of the site and commercial and health facilities will also be provided. Open space areas will include sports fields, a market garden and village green and environmental open space areas along the Tweed River. The proposed plan of development is presented as Figure 2.

Riparian vegetation and isolated vegetation stands will be retained within the development. Rehabilitation of degraded vegetation in riparian areas of the Tweed River will be undertaken to improve site ecological values and enhance amenity of open space areas.

This EMP has been prepared to manage the potential environmental impacts that may occur as a result of site development. The EMP outlines environmental controls to be implemented during the construction and operation phases of development. The following key elements are addressed in this EMP.

- Flora and Fauna Management.
- Water Quality Management.
- Sediment and Erosion Control.
- Air Quality Control.
- Noise Emissions Control.
- Waste Minimisation.
- Contingency Plan

2. PREAMBLE TO THE ENVIRONMENTAL MANAGEMENT PLAN

2.1 EMP Structure

The EMP includes the following components for each of the key environmental elements.

- **Rationale:** identification of the element to be managed and the potential environmental impact of activities associated with each element.
- **Objectives:** identification of the environmental objectives and targets to be achieved in line with the rationale and in compliance with applicable legislation.
- **Tasks/Actions:** monitoring and management measures to be implemented in order to achieve the stated objectives and targets and to ensure impact mitigation.
- **Performance Indicators:** measurable indicators and standards set to assess the efficiency of management measures and determine compliance with the Construction EMP.
- **Monitoring:** monitoring requirements to measure compliance with the performance indicators and frequency of monitoring.
- **Reporting and Review:** the requirements for reporting of monitoring results and review of management measures where required.
- **Corrective Action:** measures to be undertaken should monitoring indicate non-compliance with performance indicators.

2.2 Terminology

The term **Developer** refers to Peter Van Lieshout.

The term **Contractor** refers to the party or company contracted to perform construction works relating to the proposed development and includes all employees of the Contractor and sub-contractors.

The term **Consultant** refers to the civil and/or environmental engineering consultant employed by the Developer.

The term **Works** refers to all matters associated with the construction of the proposed development.

The term **Council** refers to Tweed Shire Council.

The term **NSW EPA** refers to the New South Wales Environmental Protection Authority (Department of Environment & Conservation).

The term **EMP** refers to the Environmental Management Plan.

2.3 Responsibility and Contractual Obligations

This EMP covers the construction phase of the works. This is defined as the period from the commencement of works to the substantial completion of the works. The Contractor is generally responsible for ensuring that the provisions of this EMP are met, with the exception of certain planning or design issues, which are explicitly noted throughout the EMP as being the responsibility of the Developer or the Consultant.

The Contractor shall ensure that all persons who are to be employed or sub-contracted for the works shall be trained as to their individual responsibilities as set out in this EMP, including the following.

General Environmental Duty – whereby a person in the performance of their duties shall not do so in a manner which will cause, or is likely to cause, environmental harm unless the person takes all reasonable and practical measures to prevent or minimise the harm.

Duty to Notify Environmental Harm – whereby if a person in the performance of their duties becomes aware that serious or material environmental harm is caused or threatened then the person must contact the Contractor whereupon the Contractor must immediately notify the Developer and/or the NSW EPA.

Compliance with the EMP – whereby a person in the performance of their duties shall do so in a manner that ensures that the provisions of this EMP are complied with.

2.4 Non-Compliance with the EMP and Corrective Action Requirements

The Contractor shall assume responsibility for implementation of this EMP. Where the Contractor becomes aware of a site or operational condition that does not comply with stated performance indicator(s) of this EMP, there is a requirement for corrective action. A Corrective Action Request (CAR) form is to be completed and authorised in general compliance with the example CAR form provided in Appendix A of this EMP. The Contractor is also required to maintain a register of CARs, which shall demonstrate that appropriate actions have been completed within a suitable timeframe.

Any CAR registered in accordance with this EMP shall be provided to the Developer, any State or Commonwealth Government Department, any statutory authority or other person, consensually or as lawfully required.

In some instances, further investigation or monitoring may be required to establish whether the Contractor has failed to adequately implement the EMP, or has failed to comply with relevant legislation, guidelines and statutes. In these instances, an independent party such as the Consultant shall carry out the investigation or monitoring. If it is established that the cause for non-compliance with the stated performance indicator(s) has arisen from the Contractor's actions or omissions, then the costs of the monitoring shall be deducted from payments to the Contractor and paid to the Consultant, otherwise the costs of the monitoring shall be obtained from the Developer and paid to the Consultant.

2.5 Emergency Contact

Suitably qualified personnel shall be designated as the 24 hour contact to handle environmental emergencies. The contact number shall be given to all employees on site

Details of the site emergency procedures shall be recorded and clearly displayed at the site including:

- name and contact number (all hours) for emergency response personnel;
- response personnel responsibilities;
- contact details for emergency services;
- location of onsite information on hazardous materials, including Material Safety Data sheets and spill containment materials;
- steps to follow to minimise damage and control an environmental emergency; and
- instructions and contact details for notifying relevant government agencies, local councils and nearby residents.

2.6 Legislative and Policy Framework

The following legislation and policies will apply to implementation of environmental management measures under this EMP.

- *Environmental Planning and Assessment Act 1979*
- *Tweed Shire Council Development Control Plan No. 16*
- *Tweed Local Environment Plan 2000*
- *Threatened Species Conservation Act 1995*
- *State Environment Planning Policy – Koala Habitat Protection*
- *Fisheries Management Act 1994*
- *Rivers and Foreshores Improvement Act 1948*

The *Environmental Planning and Assessment Act 1979* (EPA Act) controls the planning and assessment of land development in New South Wales. The EPA Act encourages the "management, development and conservation of natural and artificial resources" while promoting the "orderly and economic use and development of land".

The *Tweed Local Environment Plan 2000* has been prepared in accordance with the EPA Act and provides a legal basis for preparation of development control plans which contain provisions for land development within the Shire. The *Tweed Shire Council Development Control Plan No. 16 Subdivision Manual* (DCP16). DCP16 outlines Council's objectives for land development and provides guidelines and development standards for new subdivisions.

This EMP was developed in accordance with the provisions of the Tweed Local Environment Plan 2000 and DCP16. The development responds to the natural landform and drainage system and prevents significant alteration of existing site characteristics in accordance with the requirements of DCP16.

Site investigations were undertaken to determine opportunities and constraints of development. A Constraints Plan has been prepared to identify site features that require specific management under this EMP and other technical reports referred to herein. The Constraints Plan is presented as Figure 3.

An ecological assessment was undertaken to identify significant flora and fauna communities pursuant to the *Threatened Species Conservation Act 1995*, *Fisheries Management Act 1994*, *Rivers and Foreshores Improvement Act 1948* and the *State Environment Planning Policy – Koala Habitat Protection*. The Ecological Assessment Report provides a description of the significant species and communities that require management. Protection of significant flora and fauna will be provided by management measures proposed within this EMP.

A Bushfire Management Plan has been prepared to address the threat of bushfire and to propose site management measures to prevent loss of life and property. The BMP has been prepared in accordance with the *Rural Fires Act 1997* and details site-specific requirements for provision of buffer zones and asset protection. Management of bushfire at the site will be undertaken in accordance with the BMP and is therefore not addressed within this EMP.

3. ELEMENT 1: CONSTRUCTION SITE WORKS PLAN

RATIONALE

It is the Contractor's responsibility to determine how the works will be conducted in compliance with this EMP and this determination is to be reported to the Developer.

OBJECTIVE / TARGET

To prepare a Site Works Plan that complies with all elements and requirements of this EMP.

TASKS / ACTIONS

The Contractor shall prepare a draft Site Works Plan prior to conducting any activities associated with the physical construction of the proposed development.

The draft Site Works Plan is to contain the following elements:

1. Flora and Fauna Management
2. Water Quality Management
3. Sediment and Erosion Control
4. Bushfire Management
5. Air Quality
6. Noise Emissions
7. Waste Minimisation
8. Contingency Plan

The draft Site Works Plan is to be provided to the Developer and if required, the NSW EPA. The Contractor is to have due regard for comments made by the Developer, NSW EPA and/or the Consultant prior to the preparation of the final Site Works Plan.

Provision of a final Site Works Plan by the Contractor for the approval of the Developer. The Developer is to issue its approval of the Contractor's draft Site Works Plan to the Contractor prior to the Contractor conducting any works.

PERFORMANCE INDICATORS

Compliance with all elements of this EMP.

All CARs are to be actioned within time frames agreed between the Principal and the Contractor.

All CARs raised in response to actual or potential environmental harm to be actioned within a maximum of 24 hours.

REPORTING AND REVIEW

Reporting to the Developer upon requirement to complete a CAR and the actions taken in respect of the CAR.

CORRECTIVE ACTION

Non-conformance with the Site Works Plan shall be documented and a corrective action request (CAR) issued. All CARs shall be included in the CAR Register to be kept under the provisions of this EMP.

The Contractor shall implement the corrective action as required within the agreed time frame noted on the CAR.

4. ELEMENT 2: FLORA AND FAUNA

RATIONALE

Construction of the proposed development has the potential to impact on areas of vegetation designated for retention public. Some of these areas have significant environmental value and must not be disturbed.

OBJECTIVE / TARGET

To ensure the protection of areas of vegetation designated for retention and to minimise the requirement for the removal of vegetation at the site.

To ensure that vegetation identified for retention is not removed or damaged during the works.

To manage development works in accordance with the *Ecological Assessment* to ensure that the requirements of the relevant State and Commonwealth Legislation are complied with.

TASKS / ACTIONS

The Contractor is to address the issue of flora and fauna management in the Site Works Plan required under Element 1 of this EMP.

The Contractor is to ensure that all management strategies detailed in the Site Works Plan are complied with at all times during the conduct of the works.

The Contractor is to ensure that areas of vegetation designated for retention are adequately fenced or protected to prevent disturbance or damage during construction works.

Prior to the commencement of any vegetation clearance, the Contractor shall identify all areas to be cleared on construction plans and in the field.

The Contractor shall mulch foliage and branches of cleared native vegetation for re-use on site. Trunks of native trees may be stored intact for re-use as timber.

The Contractor shall provide fences and/or trunk girdles to prevent unintended physical damage to the root system, trunk or canopy of native vegetation identified for retention in areas adjacent to any proposed works.

The Contractor shall remove cleared non-native vegetation from the site for disposal at a suitable facility such as a landfill. Non-native vegetation shall not be mulched for re-use on site, to minimise the risk of propagation.

The Contractor shall ensure all trees and vegetation identified for clearances are inspected for native animals, by a wildlife spotter-catcher, prior to clearance.

The Contractor shall ensure any vegetation containing native fauna is retained until the fauna either moves, or is removed and subsequently released at an appropriate location in good health.

The Contractor shall report any observations of sick or injured native animals within or adjacent to the work area to the spotter/catcher who will contact the relevant authorities to receive advice concerning specific measures to be taken.

PERFORMANCE INDICATORS

No removal of vegetation identified for retention.

No mortality to fauna species at the site during the works.

All CARs are to be actioned within time frames agreed between the Principal and the Contractor.

All CARs raised in response to actual or imminent potential environmental harm to be actioned within a maximum of 24 hours.

REPORTING AND REVIEW

Reporting to the Developer upon requirement to complete a CAR and the actions taken in respect of the CAR.

CORRECTIVE ACTION

Should there be non-compliance with the stated performance indicator the following corrective actions are to be implemented.

- Identification of the cause of the non-compliance;
- Implementation of appropriate mitigation measures as determined by the Developer and Consultant in consultation with the Contractor; and
- Relevant validation monitoring to confirm that the nominated corrective actions have been effective.

The Contractor shall implement the corrective action(s) as required within the agreed time frame noted on the CAR.

5. ELEMENT 3: WATER QUALITY MANAGEMENT

RATIONALE

Construction of the proposed development will involve excavation of soils and the alteration of landform at the site. Stormwater coming in contact with this material has the potential to transport sediment and/or other contaminants to natural drainage lines and receiving waters adjacent to the site.

OBJECTIVE / TARGET

To ensure that the existing qualities of the receiving surface and ground waters in the locality of construction works are not adversely affected by activities associated with the works.

TASKS / ACTIONS

The Contractor is to address the issue of water quality in its Site Works Plan required under Element 1 of this EMP.

The Contractor is to ensure that all management strategies detailed in the Site Works Plan are complied with at all times during the conduct of the works.

The Contractor shall provide temporary control measures as required during the course of the works to prevent soil erosion, scouring, sediment transport and deposition. Suitable measures are specified in the Soil Erosion and Sediment Control Guidelines, Institute of Engineers Australia.

The Contractor shall provide measures to divert clean stormwater runoff from disturbed areas of the site to ensure that clean stormwater runoff does not become contaminated.

The Contractor shall cover stockpiles and install temporary sediment control devices on downhill slopes.

The Contractor shall establish a site access point with shakedown and wheel wash to prevent soil-tracking onto external roads.

PERFORMANCE INDICATORS

The development shall ensure that any waters being discharged from the works site comply with the following quality characteristics or demonstrate that there is no worsening of existing conditions as determined by baseline water quality monitoring.

Water Quality Parameter	Release Criteria
Suspended Solids*	<50 mg/L
pH	4.0 to 7.0
Dissolved Oxygen	> 6mg/L
Hydrocarbons	No visible sheen
Litter	No visible litter
Total Nitrogen	0.3 mg/L
Total Phosphorous	0.03 mg/L

*Suspended solids testing (and limit) may be replaced with turbidity testing (and limit) only after a statistically significant correlation or r2 or >0.8 is demonstrated.

All CARs are to be actioned within time frames agreed between the Principal and the Contractor.

All CARs raised in response to actual or imminent potential environmental harm to be actioned within a maximum of 24 hours.

MONITORING

Water quality and control structures monitoring shall be undertaken in accordance with the following schedule.

Location	Frequency	Type	Parameter
Site discharge points	Monthly and during rain events of > 25mm / 24 hours	Laboratory analysis	pH Suspended Solids Dissolved Oxygen Total Nitrogen Total Phosphorous
All control structures	Daily	Visual inspection	Inspection of structures to ensure measures are in place and
Temporary sedimentation basins	Weekly	Visual inspection	Algal blooms Signs of erosion Sediment accumulation at discharge points

Water quality monitoring of groundwater shall be undertaken in accordance with the following schedule.

Location	Frequency	Type	Tests
Site Monitoring Bores	Monthly	Field Measurement	Water Level Conductivity / Temp. pH
Site Monitoring Bores	Quarterly	Laboratory analysis	Total Nitrogen Total Phosphorus Suspended Solids

RECORD KEEPING

The Contractor shall maintain a record of any monitoring results undertaken including details of corrective actions and/or repairs undertaken.

The Contractor shall make all records available for inspection by relevant authorities.

REPORTING AND REVIEW

Results of monitoring shall be forwarded periodically to a suitable qualified environmental consultant to ensure that water quality within the groundwater basin does not deteriorate due to construction activities.

CORRECTIVE ACTION

Should there be non-compliance with the stated performance indicator the following corrective actions are to be implemented.

- Identification of the cause of the non-compliance;
- Implementation of appropriate mitigation measures as determined by the Developer and Consultant in consultation with the Contractor; and
- Relevant validation monitoring to confirm that the nominated corrective actions have been effective.

The Contractor shall implement the corrective action(s) as required within the agreed time frame noted on the CAR.

6. ELEMENT 4: EROSION AND SEDIMENTATION CONTROL

RATIONALE

Excavated areas and stockpiles are to be protected from erosion and at the competion of the works the ground surface is to be rendered stable to ensure erosion and sedimentation of receiving waters does not occur as a result of the works.

OBJECTIVE / TARGET

To minimise the risk of soil erosion and sedimentation of the receiving waters at / adjacent to the site.

To manage development works in accordance with the *Earthworks Management Plan* to ensure that the requirements of the *Development and Design Specification D7 – Stormwater Quality and its Annexure A – Code of Practice for Soil and Water Management on Construction Works* are complied with.

TASKS / ACTIONS

The Contractor is to address the issue of erosion and sedimentation control in its Site Works Plan required under Element 1 of this EMP.

The Contractor is to ensure that all management strategies detailed in the Site Works Plan are complied with at all times during the conduct of the works.

Measures shall be implemented in accordance with the requirements of the Soil Erosion and Sediment Control Guidelines, Institute of Engineers Australia. Such measures may include, but should not be limited to the following.

1. The use of sediment fences around the downslope boundary of all areas of disturbance over the site prior to commencement of construction works.
2. The use of sediment retention basins where significant areas of bare earth are exposed.
3. The use of a designated site office area with a gravel pad base for vehicles entering and leaving the works site.
4. The use of stormwater diversion and transportation infrastructure around the upslope boundary of all disturbance areas to divert clean stormwater around the site.

The Contractor shall check and repair the erosion and sediment control devices in use over the site daily and immediately following rain events >25mm/24 hours.

PERFORMANCE INDICATORS

Sediment concentrations in water discharged from the site in accordance with water quality criteria stated in Element 3.

All CARs are to be actioned within time frames agreed between the Principal and the Contractor.

All CARs raised in response to actual or imminent potential environmental harm to be actioned within a maximum of 24 hours.

MONITORING

Daily inspection of all erosion and sedimentation control devices shall be undertaken to validate optimum performance. Devices shall be inspected immediately following rain events >25mm/24 hours.

RECORD KEEPING

The Contractor shall maintain a record of any monitoring results undertaken including details of corrective actions and/or repairs undertaken.

The Contractor shall make all records available for inspection by relevant authorities on request.

REPORTING AND REVIEW

Reporting to the Developer upon requirement to complete a CAR and the actions taken in respect of the CAR.

CORRECTIVE ACTION

Should there be non-compliance with the stated performance indicator the following corrective actions are to be implemented.

- Identification of the cause of the non-compliance;
- Implementation of appropriate mitigation measures as determined by the Developer and Consultant in consultation with the Contractor; and
- Relevant validation monitoring to confirm that the nominated corrective actions have been effective.

The Contractor shall implement the corrective action(s) as required within the agreed time frame noted on the CAR.

7. ELEMENT 5: AIR QUALITY

RATIONALE

Construction of the proposed development will involve the use of powered mechanical equipment for movement of earth material to achieve the required landform for the proposed development. The bulk handling of this material has the potential to create air impurity emissions by release of dust as suspended then deposited particulate matter.

OBJECTIVE / TARGET

To minimise the emission of air impurities associated with construction works.

To comply with the stated performance indicators for air impurity levels in the locality of the works.

The Contractor is to address the issue of noise emission in its Site Works Plan required under Element 1 of this EMP.

The Contractor is to ensure that all management strategies detailed in the Site Works Plan are complied with at all times during the conduct of the works.

Activities resulting in the introduction of dust and fumes to the local atmosphere shall be minimised as far as practicable during construction. Such activities may include the manual or mechanical handling of stockpiles of building materials or the use of air emission generation vehicles.

Earthworks shall be managed to control dust. Specific control measures may include, but may not be limited to the following.

- Completion of vegetation clearing in stages, in order to minimise the area of open ground exposed at any one time.
- Early stabilisation and revegetation of any cut or filled areas and slope works using, for example, wood chip layers.
- Watering of all exposed areas as required.
- Provision of windbreaks and silt fences as required.

Stockpiles shall be managed to control dust. Specific control measures may include, but may not be limited to the following.

- Minimisation and stabilisation of stockpile areas.
- Maintenance of stockpiles within designated areas and prevention of spread of stockpile material into adjacent areas.
- Creation of no more stockpiles than is necessary, and removal of all stockpiles upon completion of works at the site.
- Provision of windbreaks and silt fences as required.

The emission of air impurities associated with operation activities shall be minimised to ensure compliance with the specified performance criteria.

All vehicles and equipment shall be operated and maintained in accordance with the manufacturer's specifications.

PERFORMANCE INDICATORS

No complaint relating to excessive emission of air impurities from the works site from any person.

Air quality criteria for limits on odour and particulate concentrations are presented below.

Parameter	Maximum Acceptable Concentration
Annual 24 hour averaged dust concentration, total suspended particulates	90 µg/m^3
Annual 24 hour averaged dust concentration as PM_{10}	50µg/m^3
24 hour average dust concentration as PM_{10}	150µg/m^3
Visibility	20km
Average dust deposition rate	120mg/m^2/day

MONITORING

If through the CAR process it is determined that on the balance of probabilities the Contractor's actions have brought about a complaint then monitoring of suspended particulate matter at the complainants premises is required.

RECORD KEEPING

The Contractor shall maintain a record of all complaints received in relation to air quality including complainant details, nature of complaint and corrective actions undertaken.

The Contractor shall maintain a record of any monitoring results undertaken including details of corrective actions and/or repairs undertaken.

The Contractor shall make all records available for inspection by relevant authorities on request.

REPORTING AND REVIEW

Reporting to the Developer upon requirement to complete a CAR and the actions taken in respect of the CAR.

CORRECTIVE ACTION

Should a complaint relating to excessive emission of air impurities from the works site be received the following corrective actions are to be implemented.

- Response to complainant outlining procedure for corrective action
- Identification of the source(s) of the excessive emission of air impurities;
- Implementation of appropriate mitigation measures as determined by the Developer and Consultant in consultation with the Contractor; and
- Relevant validation monitoring of air impurity concentrations at nominated locations.
- Notification of complainant that complaint has been closed out, with details of corrective actions undertaken.

The Contractor shall implement the corrective action(s) as required within the agreed time frame noted on the CAR.

8. ELEMENT 6: NOISE EMISSION

RATIONALE

Construction of the proposed development will involve the use of powered mechanical equipment. Appropriate management measures are required to ensure that noise produced at the site during construction works does not result in annoyance or disturbance at the closest noise sensitive place.

OBJECTIVE / TARGET

To control noise generated by construction activities and to minimise the impact of noise to ensure acceptable levels of amenity for the closest sensitive receptors.

TASKS / ACTIONS

The Contractor is to address the issue of noise emission in its Site Works Plan required under Element 1 of this EMP.

The Contractor is to ensure that all management strategies detailed in the final Site Works Plan are complied with at all times during the conduct of the works.

All noise generating mobile and stationary plant and equipment, and processes shall be controlled to minimise noise emission in accordance with AS 2436: Guide to Noise Control on Construction, Maintenance and Demolition Sites. In particular, all powered mechanical equipment shall be fitted with effective exhaust mufflers.

Noisy activities shall be avoided at times that are likely to cause disturbance at neighbouring locations.

Working hours at the site shall be limited to the period between 7.00am and 6.00pm Monday to Friday and 7.00am to 4pm Saturday. There are to be no works conducted at the site on Sunday or during public holidays.

All vehicles entering or leaving the site or used at the site shall be operated and maintained in a manner which ensures that the noise levels produced by the vehicles are within the limits of the Commonwealth Department of Transport and Regional Services Federal Office of Road Safety Australian Design Rule ADR28- External Noise of Motor Vehicles.

In the event of the adjusted noise level for a single noise source or activity, exceeding the background noise level by more than 10 dB(A) at any noise sensitive location, consideration shall be given to restricting the times during which the activity can take place to a number of separate hours each day. Persons affected by the noise shall be consulted with regard to suitable hours and advised of the agreed operations schedule.

PERFORMANCE INDICATORS

The works shall be carried out by such practicable means necessary to prevent the emission of noise that constitutes *"unreasonable"* or *"intrusive"* noise.

MONITORING

Monitoring shall be undertaken as required by regulatory authorities following receipt of complaints relating to excessive noise.

RECORD KEEPING

The Contractor shall maintain a record of any monitoring results undertaken including details of corrective actions and/or repairs undertaken.

The Contractor shall make all records available for inspection by relevant authorities on request.

REPORTING AND REVIEW

Reporting to the Developer upon requirement to complete a CAR and the actions taken in respect of the CAR.

CORRECTIVE ACTION

Should a complaint relating to excessive emission of noise from the works site be received the following corrective actions are to be implemented.

- Response to complainant outlining procedure for corrective action
- Identification of the source(s) of the excessive emission of noise;
- Implementation of appropriate mitigation measures as determined by the Developer and Consultant in consultation with the Contractor; and
- Relevant validation monitoring of noise levels as a result of the works at nominated locations.
- Notification of complainant that complaint has been closed out, with details of corrective actions undertaken.

The Contractor shall implement the corrective action(s) as required within the agreed time frame noted on the CAR.

9. ELEMENT 7: WASTE MANAGEMENT

RATIONALE

Waste management at the works site is to focus on appropriate methods to avoid, reuse, recycle and dispose of waste materials generated as a result of the works.

OBJECTIVE / TARGET

To ensure that all materials used to conduct the works do not cause unlawful environmental harm.

To ensure that no waste material is released from the site in an uncontrolled manner.

TASKS / ACTIONS

The Contractor is to address the issue of waste management in the Site Works Plan required under Element 1 of this EMP.

The Contractor is to ensure that all management strategies detailed in the Site Works Plan are complied with at all times during the conduct of the works.

Construction Contractors shall maintain a regular waste removal schedule and document all waste disposal activities. These activities shall be listed on a Waste Register Form, an example of which is provided in Appendix B.

The Contractor shall provide appropriate methods for the collection and lawful disposal of any wastes produced at the site during the works.

The Contractor shall provide separate on-site storage bins for reuse of waste materials. Waste materials that cannot be reused on site shall be separated into designated holding containers for collection.

The Contractor shall provide separate waste holding bins and recycling bins within construction working spaces.

The Contractor shall colour code all waste holding bins for separation of wastes into categories.

The Contractor shall provide adequate signage for all waste holding and disposal bins. The Contractor shall locate waste disposal skip(s) in a designated area(s) suitable for collection by waste disposal vehicles.

The Contractor shall have due regard for the waste management hierarchy The waste management hierarchy lists the types of waste management practices in preferred order of adoption, as detailed below.

1. Waste avoidance
2. Waste re-use
3. Waste recycling
4. Energy recovery from waste
5. Waste disposal

PERFORMANCE INDICATORS

No waste of any type to be released from the works site in an uncontrolled manner.

Visual inspection of on-site waste holding and waste collection areas shall be undertaken routinely. Evidence of waste spillage or dispersal shall indicate non-compliance with the objectives and the tasks/actions outlined in this WMP.

Visual inspection of on-site stormwater drains shall be undertaken routinely in accordance with the schedule presented in Element 3. Evidence of stormwater blockage by wastes or pollution shall indicate non-compliance with the objectives and the tasks/actions outlined in this EMP.

FREQUENCY / DEADLINE

Waste shall be collected for disposal on a regular (at least weekly) basis, and additional services shall be arranged if required. The collection site shall be inspected weekly by the Contractor during construction and by the Operator during operation to determine the need for additional collection services.

Visual inspections of all waste holding and collection areas and stormwater drains shall be undertaken by the Contractor on a daily basis during construction.

MONITORING

Periodic site inspections shall include monitoring of waste accumulation within the site to ensure timely removal from site.

The Contractor shall maintain a record of all complaints received in relation to waste including complainant details, nature of complaint and corrective actions undertaken.

RECORD KEEPING

Records of all waste management actions shall be maintained including details of regulated waste tracking, removal by contractors and proposed disposal.

The Contractor shall make all records available for inspection by relevant authorities on request.

REPORTING AND REVIEW

Reporting to the Developer upon requirement to complete a CAR and the actions taken in respect of the CAR.

CORRECTIVE ACTION

Should there be non-compliance with the stated performance indicator the following corrective actions are to be implemented.

- Identification of the cause of the non-compliance;
- Implementation of appropriate mitigation measures as determined by the Developer and Consultant in consultation with the Contractor; and
- Relevant validation monitoring to confirm that the nominated corrective actions have been effective.

The Contractor shall implement the corrective action(s) as required within the agreed time frame noted on the CAR.

10. ELEMENT 8: CONTINGENCY PLAN

RATIONALE

To avoid detrimental impact on the receiving environment external to the site as a result of unplanned or emergency events associated with the works.

OBJECTIVE / TARGET

To effectively manage unplanned or emergency events at the site.

TASKS / ACTIONS

The Contractor is to address the issue of unplanned or emergency events in its Site Works Plan required under Element 1 of this EMP.

The Contractor is to ensure that all management strategies detailed in the Site Works Plan are complied with at all times during the conduct of the works.

The following tasks shall be actioned in the event of unplanned or emergency events occurring during the works.

Heavy or Prolonged Rainfall

Construction phase stormwater treatment and conveyance measures employed at the site are expected to be adequate for rainfall events up to a 1 in 10 year rainfall event. In the event that heavy or prolonged rainfall occurs beyond this event magnitude at the site during the works, the following actions shall be implemented.

1. The Contractor shall make an initial assessment of the possible impacts of the rain based on weather forecasts and current site conditions.
2. If the assessment concludes that the rainfall event will result in an increased risk of stormwater contamination, then the Contractor shall cease works at the site.
3. The Contractor shall take actions to ensure that erosion and sediment control measures in place over the site are performing adequately and that stormwater discharges from the site meet the release criteria specified in Element 3. Actions shall also be taken to ensure that all materials being stored at the site including fuels and lime are secure and there is no risk of accidental release or stormwater contamination.
4. If required, the Contractor shall make necessary repairs, alterations or additions to the erosion and sediment control devices and the storage sheds at the site.
5. The Contractor shall only recommence at the site only after the site has been assessed and it has been determined that the risk of erosion and sedimentation has returned to normal and all erosion and sediment control measures have been assessed and repaired / replaced as required.

Accidental Release of Material

In the event that accidental release of material occurs at the site during the works, the following actions shall be implemented.

1. The Contractor shall take appropriate steps to contain the released material. This shall include the use of accidental spill kits located adjacent to stored materials.
2. The Contractor shall make an initial assessment of the severity of the accidental release and the nature of the material.
3. The Contractor shall notify the NSW EPA, the Developer and the Consultant of any accidental release of material.
4. The Contractor shall take steps in consultation with the NSW EPA to treat, remove or otherwise manage the released material.
5. The Contractor, NSW EPA, Developer and Consultant shall make an assessment of the area to confirm the success of the remediation works and whether additional works are required.
6. The Contractor shall assess the work procedures or cause of the failure and implement any changes deemed to be appropriate to prevent reoccurrence of a similar incident in the future.
7. Following completion of remedial actions the Contractor shall provide an incident report or CAR to the Developer detailing the nature of the incident and the corrective actions implemented.

Construction is Halted Due to Unforseen Circumstances

In the event that construction works are halted due to unforseen circumstances, to ensure that environmental deterioration does not occur over time the Contractor shall ensure that all erosion and sediment control devices are intact and operational.

Prior to vacating the site, the Contractor shall ensure that all stockpiles are adequately stabilised and the total disturbed area is minimised. In addition, any site conditions that could conceivably degrade over time and may result in environmental harm shall be attended to.

The Contractor shall monitor and maintain the erosion and sediment control devices on a continual basis until work re-commences at the site.

PERFORMANCE INDICATORS

No adverse environmental impacts associated with unplanned or emergency events of any type to be experienced on the site at any time during the works.

All CARs are to be actioned closed out within time frames agreed between the Principal and the Contractor.

All CARs raised in response to actual or imminent potential environmental harm to be actioned within a maximum of 24 hours.

FREQUENCY / DEADLINE

Implementation is to be ongoing for the duration of the works.

REPORTING AND REVIEW

Monthly reports by the Contractor to the Developer on the monitoring during construction, including all corrective action taken to maintain the performance requirement.

CORRECTIVE ACTION

Should there be non-compliance with the stated performance indicator the following corrective actions are to be implemented.

- Identification of the cause of the non-compliance;
- Implementation of appropriate mitigation measures as determined by the Developer and Consultant in consultation with the Contractor; and
- Relevant validation monitoring to confirm that the nominated corrective actions have been effective.

The Contractor shall implement the corrective action(s) as required within the agreed time frame noted on the CAR.

FIGURES

Figure 1 **Locality Plan**

Figure 2 **Proposed Development**

Figure 3 **Constraints Plan**

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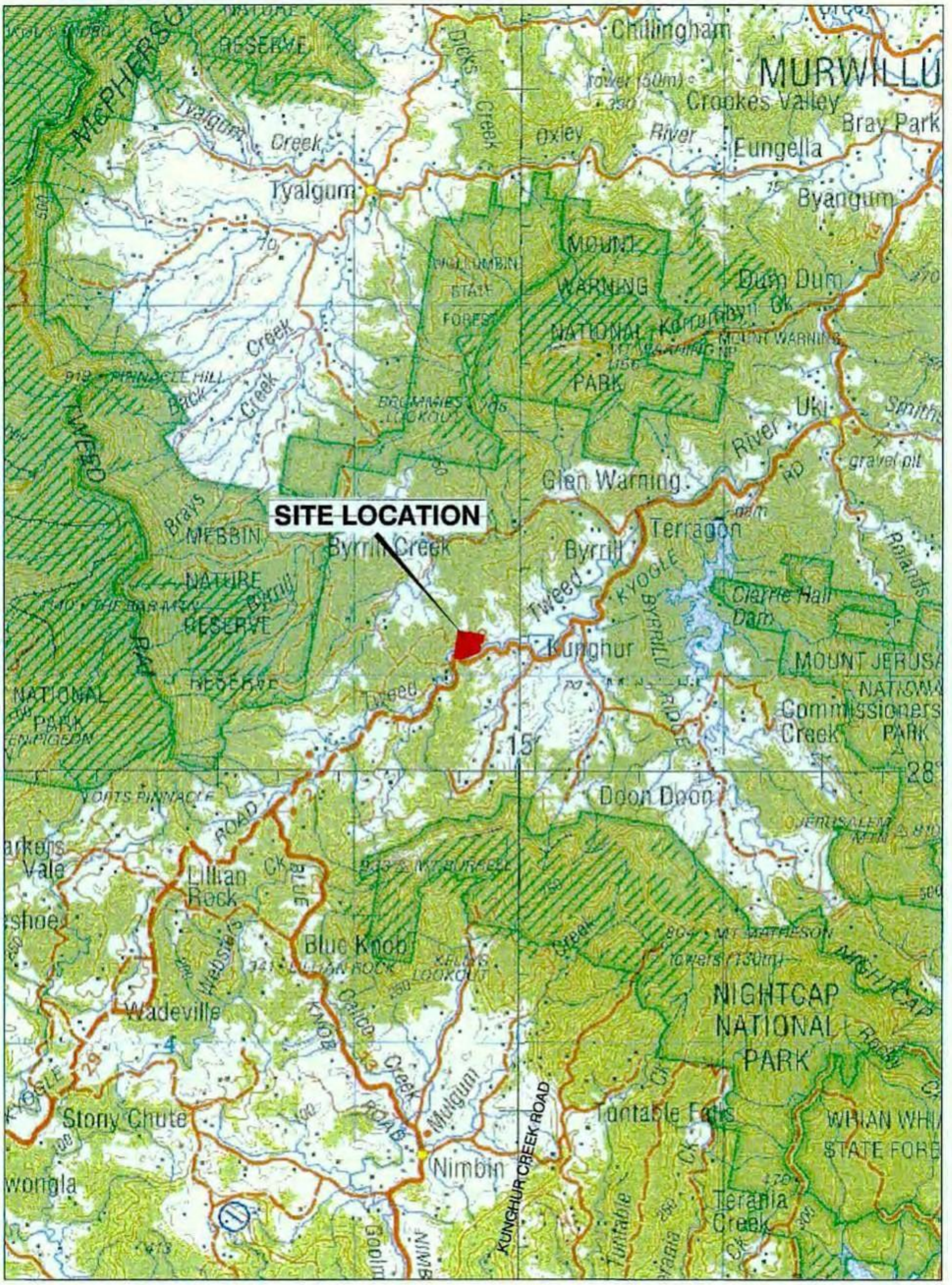

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Rev: Orig. Date: 22 June 2006

Peter Van Lieshout

CAD FILE: I:\3500-53\ACAD\EMP\Figure 1 - Locality Plan.dwg
XREF's: xr-Cadastre_study_area MGA94, xr-NSW Topo Maps

Scale 1:150,000 (A4)

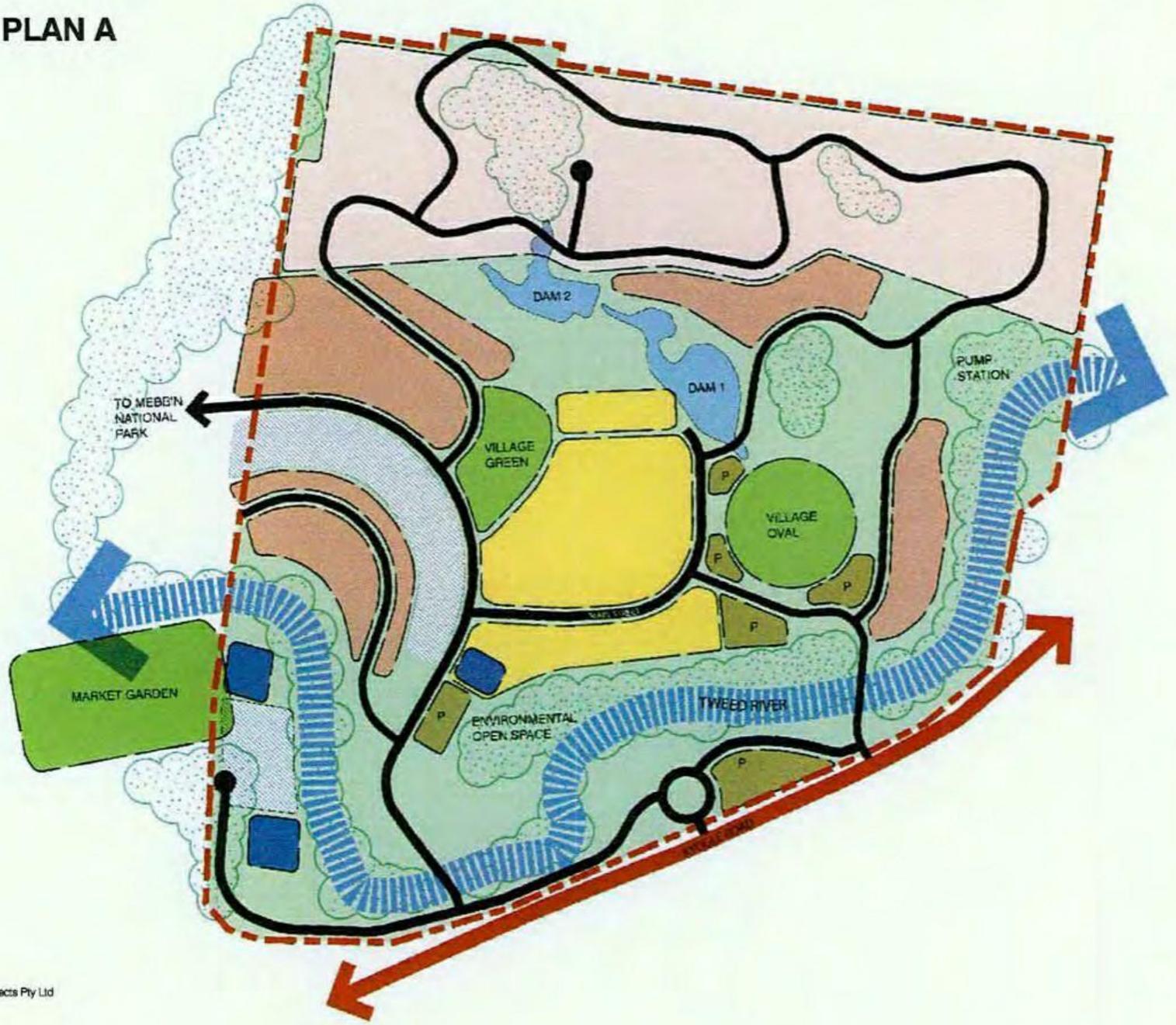
FIGURE 1
LOCALITY PLAN

Project No.: 3500/53

PRINT DATE: 22 June, 2006 - 1:53pm

Cardno

CONCEPT PLAN A



LEGEND

- VILLAGE LOTS
- VILLAGE HOUSING
- MIXED VILLAGE
- TOURISM AND SPECIAL USES
- OPEN SPACE (Village Green, Sports Display, Market Garden)
- ENVIRONMENTAL OPEN SPACE
- RE-HABILITATION AREA
- P PARKING
- SITE BOUNDARY
- RIVER CORRIDOR

Image Sourced from: Malcolm Middleton Architects Pty Ltd

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Rev: Orig. Date: 28 June 2006

Peter Van Lieshout

CAD FILE: I:\3500-53\ACAD\EMP\Figure 2 - Proposed Plan of Development.dwg
XREFs:

Scale N.T.S

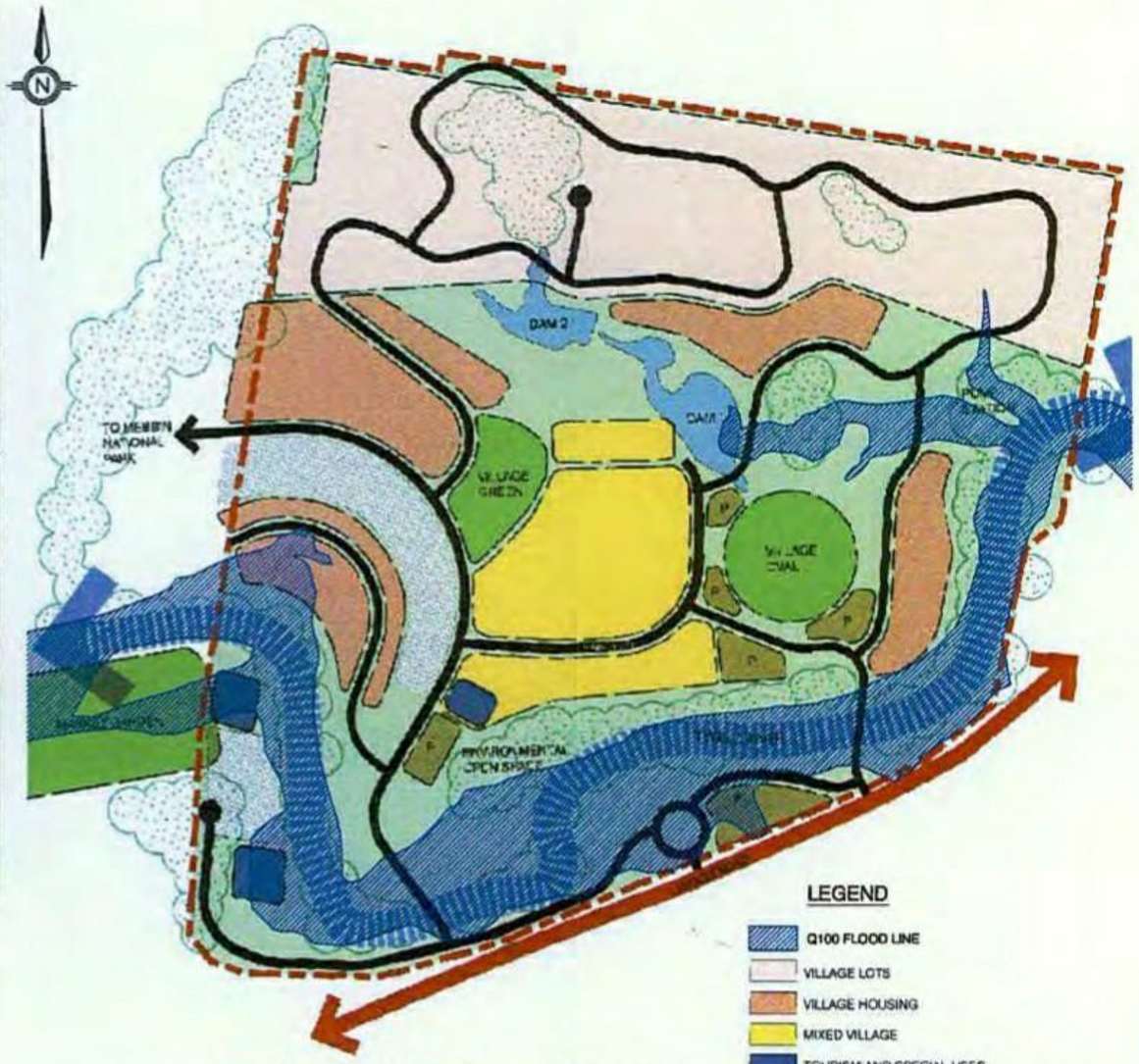
FIGURE 2
PROPOSED PLAN OF DEVELOPMENT

Project No.: 3500/53

PRINT DATE: 28 June, 2006 - 11:44 am

Scale 1:5000(A3)

50 0 50 100 150 200 250m
1:5000



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Scale N.TS

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CAD FILE: I:\3500-53\ACAD\EMP\Figure 3 - Constraints Plan.dwg
XREF's: ar-Aerial Ortho QASCO

FIGURE 3
CONSTRAINTS PLAN

Project No.: 3500/53
PRINT DATE: 28 July, 2006 - 9:19am

APPENDIX A

Corrective Action Request Form

CORRECTIVE ACTION REQUEST

Report No: _____

Date: _____

DETAILS OF NON-CONFORMANCE: Inspected by:
DETAILS OF PROPOSED ACTION Passed to Developer (as applicable):y/n Date: Reply required by:
CONSULTANT/DEVELOPER ADVICE (as required): Date action required by (if applicable): Signed (by Developer or Developer's representative): Date:
AUTHORITY TO PROCEED Sign: Date:
ACTION CARRIED OUT Sign: Date:
ELEMENT RE-INSPECTED BY Sign: Date:
COPY ISSUED TO DEVELOPER Date: Sign:

APPENDIX B

Waste Register Forms

Waste Register: Site Preparation

Site Material		Destination		
		Reuse and Recycling		Disposal
Type of material	**Estimated Volume (m^3)**	**On-site (Specify proposed reuse or on-site recycling methods)**	**Off-site (Specify contractor and recycling outlet)**	**Specify disposal facility**
Excavation Material (eg sand/soil)		Retain & re-use. Store on-site		
Vegetation Waste		Retain & re-use. Store on-site		
Paper and Cardboard				
Plastics				
Bricks and Tiles				
Concrete				
Timber (provide details)				
Metals (provide details)				
Asbestos containing Material				
Other(Provides details)				
Domestic wasies				

Waste Register: Construction

Site Material		Destination		
		Reuse and Recycling		Disposal
Type of material	Estimated Volume (m^3)	On-site (Specify proposed reuse or on-site recycling methods)	Off-site (Specify contractor and recycling outlet)	Specify disposal facility
Plastics				
Bricks and Tiles				
Concrete				
Timber (provide details)				
Metals (provide details)				
Cables and Wire				
Other(provide details)				
Domestic wastes				